

-- 183. (NEW) A composition of matter comprising:

a transparent non-porous or translucent non-porous system containing a fluid or solution, which system comprises:

- Sub H<sub>1</sub>
- (i) a solid support;
  - (ii) a double-stranded oligonucleotide or polynucleotide which is directly or indirectly fixed or immobilized to said solid support; and
  - (iii) a chemical label or labels attached to one of said strands, said label or labels comprising a signaling entity or entities which are quantifiable in or from said fluid or solution or in or through said system, said quantity being proportional to the amount or quantity of said label or labels. --

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-- 184. (NEW) The composition according to claim 183, wherein said solid support is contained within the transparent non-porous or translucent non-porous system. --

-- 185 (NEW) The composition according to claim 183, wherein said solid support is porous or non-porous. --

-- 186. (NEW) The composition according to claim 185, wherein said porous solid support comprises a porous polymeric material. --

-- 187. (NEW) The composition according to claim 186, wherein said porous polymeric material is selected from the group consisting of dextran, cellulose and nitrocellulose. --

-- 188. (NEW) The composition according to claim 185, wherein said non-porous solid support is selected from the group consisting of siliceous matter and non-porous polymeric material. --

-- 189. (NEW) The composition according to claim 188, wherein said siliceous matter comprises glass or a glass-coated surface. --

-- 190. (NEW) The composition according to claim 189, wherein said glass or glass-coated surface comprises porous glass. --

-- 191. (NEW) The composition according to claim 188, wherein said non-porous polymeric material comprises plastic or a plastic-coated surface. --

F -- 192. (NEW) The composition according to claim 191, wherein said plastic or plastic-coated surface is selected from the group consisting of polyethylene, polypropylene, polystyrene and polyepoxide. --

-- 193. (NEW) The composition according to claim 183, wherein said system is selected from the group consisting of a well, a depression, a tube, a cuvette and a collection or set of said wells, depressions, tubes or cuvettes. --

-- 194. (NEW) The composition according to claim 193, wherein said well comprises a microtiter well. --

-- 195. (NEW) The composition according to claim 193, wherein said wells in the collection or set comprise microtiter wells. --

-- 196. (NEW) The composition according to claim 183, wherein said system is selected from the group consisting of a well, a depression, a tube, a cuvette and a collection or set of said wells, depressions, tubes or cuvettes, and said solid support is selected from the group consisting of dextran, cellulose, nitrocellulose, glass or a glass-coated surface and plastic or a plastic-coated surface. --

-- 197. (NEW) The composition according to claim 183, wherein said solid support and said system are composed of the same materials. --

-- 198. (NEW) The composition according to claim 183, wherein said solid support and said system are composed of different materials. --

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-- 199. (NEW) The composition according to claim 183, wherein said solid support and said system are the same. --

-- 200. (NEW) The composition according to claim 183, wherein said system functions as the solid support. --

-- 201. (NEW) The composition according to claim 183, wherein one of said oligonucleotide or polynucleotide strands is directly or indirectly fixed or immobilized to the solid support. --

-- 202. (NEW) The composition according 183, wherein said oligonucleotide or polynucleotide strand is fixed or immobilized to the solid support by sandwich hybridization. --

-- 203. (NEW) The composition according to claim 183, wherein said double-stranded oligonucleotide or polynucleotide is selected from the group consisting of DNA, RNA and a DNA-RNA hybrid. --

-- 204. (NEW) The composition according to claim 183, wherein one of said strands comprises a nucleic acid sequence sought to be identified or quantified. --

-- 205. (NEW) The composition according to claim 204, wherein said nucleic acid sequence sought to be identified or quantified comprises a member selected from the group consisting of a gene or gene sequence, a pathogen or pathogenic sequence, an oncogene, and a combination of any of the foregoing. --

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-- 206. (NEW) The composition according to claim 205, wherein any of said members comprises a mutation selected from the group consisting of a deletion, an insertion, an inversion, a point mutation, and a combination of any of the foregoing. --

-- 207. (NEW) The composition according to claims 183 or 203, wherein said oligonucleotide or polynucleotide is partially double-stranded. --

-- 208. (NEW) The composition according to claim 183, wherein said label or labels are the signaling entity or entities. --

-- 209. (NEW) The composition according to claim 183, wherein said label or labels are directly attached to the oligonucleotide or polynucleotide. --

-- 210. (NEW) The composition according to claim 208, wherein said label or labels are directly attached to the oligonucleotide or polynucleotide. --

-- 211. (NEW) The composition according to claim 183, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide. --

-- 212. (NEW) The composition according to claim 208, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide. --

-- 213. (NEW) The composition according to claim 211, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide through the formation of a complex. --

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-- 214. (NEW) The composition according to claim 212, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide through the formation of a complex. --

-- 215. (NEW) The composition according to claim 213, wherein said complex is selected from the group consisting of biotin and avidin, biotin and streptavidin, a sugar and lectin, and an antigen and an antibody. --

-- 216. (NEW) The composition according to claim 214, wherein said complex is selected from the group consisting of biotin and avidin, biotin and streptavidin, a sugar and lectin, and an antigen and an antibody. --

-- 217. (NEW) The composition according to claim 211, wherein said indirect attachment of said label or labels to the oligonucleotide or polynucleotide is through a bridging moiety. --

-- 218. (NEW) The composition according to claim 212, wherein said indirect attachment of said label or labels to the oligonucleotide or polynucleotide is through a bridging moiety. --

-- 219. (NEW) The composition according to claim 183, wherein the signaling entity or entities of said label or labels are directly or indirectly attached thereto. --

-- 220. (NEW) The composition according to claims 183 or 208, wherein said signaling entity or entities are directly produced. --

F ( -- 221. (NEW) The composition according to claims 220, wherein said signaling entity or entities are selected from the group consisting of a chromagen, fluorescence and chemiluminescence. --

-- 222. (NEW) The composition according to claims 183 or 208, wherein said signaling entity or entities are selected from the group consisting of an enzyme, a co-enzyme, a chelating compound, a chromagen, a fluorescent compound and a chemiluminescent compound. --

-- 223. (NEW) The composition according to claims 183 or 208, wherein said signaling entity or entities are selected from the group consisting of a colored compound, a chemiluminescent compound and a fluorescent compound. --

-- 224. (NEW) The composition according to claim 223, wherein said colored compound comprises a dye. --

-- 225. (NEW) The composition according to claims 183, 208 or 220, wherein said chemical label or labels comprise self-indicating signaling entities. --

-- 226. (NEW) The composition according to claim 225, wherein said self-indicating signaling entities are selected from the group consisting of a fluorescent compound, a chemiluminescent compound and a chromagen compound, and a combination of any of the foregoing. --

-- 227. (NEW) The composition according to claims 183 or 208, wherein said signaling entity or entities are indirectly produced or generated. --

F1 -- 228. (NEW) The composition according to claim 227, wherein said signaling entity or entities are indirectly generated or generatable by an enzyme or enzymatic reaction. --

G -- 229. (NEW) The composition according to claim 183, wherein said signaling entity or entities are detectable or quantifiable by a <sup>means</sup> technique selected from the group consisting of photometric techniques and colorimetric techniques. --

G -- 230. (NEW) The composition according to claim 229, wherein said photometric <sup>means</sup> techniques comprise spectrophotometric techniques. --

-- 231. (NEW) A composition of matter comprising:

a transparent non-porous or translucent non-porous system containing a fluid or solution, which system comprises:

a double-stranded oligonucleotide or polynucleotide which is directly or indirectly fixed or immobilized to said system; and

a chemical label or labels attached to one of said strands, said label or labels comprising a signaling entity or entities which are quantifiable in or from said fluid or solution or in or through said system, said quantity being proportional to the amount or quantity of said label or labels. --

-- 232. (NEW) The composition according to claim 231, wherein said non-porous system is selected from the group consisting of siliceous matter and non-porous polymeric material. --

-- 233. (NEW) The composition according to claim 232, wherein said siliceous matter comprises glass or a glass-coated surface. --

-- 234. (NEW) The composition according to claim 233, wherein said glass or glass-coated surface comprises porous glass. --

-- 235. (NEW) The composition according to claim 232, wherein said non-porous polymeric material comprises plastic or a plastic-coated surface. --

-- 236. (NEW) The composition according to claim 235, wherein said plastic or plastic-coated surface is selected from the group consisting of polyethylene, polypropylene, polystyrene and polyepoxide. --



-- 237. (NEW) The composition according to claim 231, wherein said system is selected from the group consisting of a well, a depression, a tube, a cuvette and a collection or set of said wells, depressions, tubes or cuvettes. --

-- 238. (NEW) The composition according to claim 237, wherein said well comprises a microtiter well. --

-- 239. (NEW) The composition according to claim 237, wherein said wells in the collection or set comprise microtiter wells. --

-- 240. (NEW) The composition according to claim 231, wherein said system functions as a solid support. --

-- 241. (NEW) The composition according to claim 231, wherein one of said oligonucleotide or polynucleotide strands is directly or indirectly fixed or immobilized to said system. --

-- 242. (NEW) The composition according 231, wherein said oligonucleotide or polynucleotide strand is fixed or immobilized to said system by sandwich hybridization. --

-- 243. (NEW) The composition according to claim 231, wherein said double-stranded oligonucleotide or polynucleotide is selected from the group consisting of DNA, RNA and a DNA-RNA hybrid. --

-- 244. (NEW) The composition according to claim 231, wherein one of said strands comprises a nucleic acid sequence sought to be identified or quantified. --

-- 245. (NEW) The composition according to claim 244, wherein said nucleic acid sequence sought to be identified or quantified comprises a member selected from the group consisting of a gene or gene sequence, a pathogen or pathogenic sequence, an oncogene, and a combination of any of the foregoing. --

-- 246. (NEW) The composition according to claim 245, wherein any of said members comprises a mutation selected from the group consisting of a deletion, an insertion, an inversion, a point mutation, and a combination of any of the foregoing. --

-- 247. (NEW) The composition according to claims 231 or 243, wherein said oligonucleotide or polynucleotide is partially double-stranded. --

F. -- 248. (NEW) The composition according to claim 231, wherein said label or labels are the signaling entity or entities. --

-- 249. (NEW) The composition according to claim 231, wherein said label or labels are directly attached to the oligonucleotide or polynucleotide. --

-- 250. (NEW) The composition according to claim 248, wherein said label or labels are directly attached to the oligonucleotide or polynucleotide. --

-- 251. (NEW) The composition according to claim 231, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide. --

-- 252. (NEW) The composition according to claim 248, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide. --

-- 253. (NEW) The composition according to claim 251, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide through the formation of a complex. --

-- 254. (NEW) The composition according to claim 252, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide through the formation of a complex. --

-- 255. (NEW) The composition according to claim 253, wherein said complex is selected from the group consisting of biotin and avidin, biotin and streptavidin, a sugar and lectin, and an antigen and an antibody. --

-- 256. (NEW) The composition according to claim 254, wherein said complex is selected from the group consisting of biotin and avidin, biotin and streptavidin, a sugar and lectin, and an antigen and an antibody. --

-- 257. (NEW) The composition according to claim 251, wherein said indirect attachment of said label or labels to the oligonucleotide or polynucleotide is through a bridging moiety. --

-- 258. (NEW) The composition according to claim 252, wherein said indirect attachment of said label or labels to the oligonucleotide or polynucleotide is through a bridging moiety. --

-- 259. (NEW) The composition according to claim 231, wherein the signaling entity or entities of said label or labels are directly or indirectly attached thereto. --

-- 260. (NEW) The composition according to claims 231 or 248, wherein said signaling entity or entities are directly produced. --

-- 261. (NEW) The composition according to claims 260, wherein said signaling entity or entities are selected from the group consisting of a chromagen, fluorescence and chemiluminescence. --

-- 262. (NEW) The composition according to claims 231 or 248, wherein said signaling entity or entities are selected from the group consisting of an enzyme, a co-enzyme, a chelating compound, a chromagen, a fluorescent compound and a chemiluminescent compound. --

-- 263. (NEW) The composition according to claims 231 or 248, wherein said signaling entity or entities are selected from the group consisting of a colored compound, a chemiluminescent compound and a fluorescent compound. --

-- 264. (NEW) The composition according to claim 263, wherein said colored compound comprises a dye. --

-- 265. (NEW) The composition according to claims 231, 248 or 264, wherein said chemical label or labels comprise self-indicating signaling entities. --

-- 266. (NEW) The composition according to claim 265, wherein said self-indicating signaling entities are selected from the group consisting of a fluorescent agent, a chemiluminescent agent and a chromagen, and a combination of any of the foregoing. --

-- 267. (NEW) The composition according to claims 231 or 248, wherein said signaling entity is indirectly produced or generated. --

-- 268. (NEW) The composition according to claim 267, wherein said signaling entity or entities are indirectly generatable by an enzyme or enzymatic reaction. --

G -- 269. (NEW) The composition according to claim 231, wherein said signaling entity or entities are detectable or quantifiable by a <sup>means</sup> technique selected from the group consisting of photometric techniques and colorimetric techniques. --

-- 270. (NEW) The composition according to claim 269, wherein said photometric <sup>means</sup> techniques ~~techniques~~ comprise spectrophotometric techniques. --

F1 -- 271. (NEW) A transparent non-porous or translucent non-porous system containing a fluid or solution, which system comprises:

(i) a double-stranded nucleic acid comprising an oligonucleotide or polynucleotide hybridized or hybridizable to an oligo- or polynucleotide sequence;

Sub H3 (ii) a chemical label or labels attached to one of said strands, said chemical label or labels comprising a signaling entity or entities which are quantifiable in or from said fluid or solution or in or through said system, said quantity being proportional to the amount or quantity of said label or labels; and

(iii) a solid support having directly or indirectly fixed or immobilized thereto said oligo- or polynucleotide sequence or said oligonucleotide or polynucleotide (i). --

-- 272. (NEW) The system according to claim 271, wherein said solid support is contained within the transparent non-porous or translucent non-porous system. --

-- 273. (NEW) The system according to claim 271, wherein said solid support is porous or non-porous. --

-- 274. (NEW) The system according to claim 273, wherein said porous solid support comprises a porous polymeric material. --

-- 275. (NEW) The system according to claim 274, wherein said porous polymeric material is selected from the group consisting of dextran, cellulose and nitrocellulose. --

P. -- 276. (NEW) The system according to claim 271, wherein said non-porous solid support is selected from the group consisting of siliceous matter and non-porous polymeric material. --

-- 277. (NEW) The system according to claim 276, wherein said siliceous matter comprises glass or a glass-coated surface. --

-- 278. (NEW) The system according to claim 277, wherein said glass or glass-coated surface comprises porous glass. --

-- 279. (NEW) The system according to claim 276, wherein said non-porous polymeric material comprises plastic or a plastic-coated surface. --

-- 280. (NEW) The system according to claim 279, wherein said plastic or plastic-coated surface is selected from the group consisting of polyethylene, polypropylene, polystyrene and polyepoxide. --

-- 281. (NEW) The system according to claim 271, wherein said system is selected from the group consisting of a well, a depression, a tube, a cuvette and a collection or set of said wells, depressions, tubes or cuvettes. --

-- 282. (NEW) The system according to claim 281, wherein said well comprises a microtiter well. --

-- 283. (NEW) The system according to claim 281, wherein said wells in the collection or set comprise microtiter wells. --

F' -- 284. (NEW) The system according to claim 271, wherein said system is selected from the group consisting of a well, a depression, a tube, a cuvette and a collection or set of said wells, depressions, tubes or cuvettes, and said solid support is selected from the group consisting of dextran, cellulose, nitrocellulose, glass or a glass-coated surface and plastic or a plastic-coated surface. --

-- 285. (NEW) The system according to claim 271, wherein said solid support and said system are composed of the same materials. --

-- 286. (NEW) The system according to claim 271, wherein said solid support and said system are composed of different materials. --

-- 287. (NEW) The system according to claim 271, wherein said solid support and said system are the same. --

-- 288. (NEW) The system according to claim 271, wherein said system functions as the solid support. --

-- 289. (NEW) The system according to claim 271, wherein one of said oligonucleotide or polynucleotide strands is directly or indirectly fixed or immobilized to the solid support. --

-- 290. (NEW) The system according to claim 271, wherein said oligonucleotide or polynucleotide strand is fixed or immobilized to the solid support by sandwich hybridization. --

-- 291. (NEW) The system according to claim 271, wherein said double-stranded oligonucleotide or polynucleotide is selected from the group consisting of DNA, RNA and a DNA-RNA hybrid. --

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-- 292. (NEW) The system according to claim 271, wherein one of said strands comprises a nucleic acid sequence sought to be identified or quantified. --

-- 293. (NEW) The system according to claim 292, wherein said nucleic acid sequence sought to be identified or quantified comprises a member selected from the group consisting of a gene or gene sequence, a pathogen or pathogenic sequence, an oncogene, and a combination of any of the foregoing. --

-- 294. (NEW) The system according to claim 293, wherein any of said members comprises a mutation selected from the group consisting of a deletion, an insertion, an inversion, a point mutation, and a combination of any of the foregoing. --

-- 295. (NEW) The system according to claims 271 or 291, wherein said oligonucleotide or polynucleotide is partially double-stranded. --



-- 296. (NEW) The system according to claim 271, wherein said label or labels are the signaling entity or entities. --

-- 297. (NEW) The system according to claim 271, wherein said label or labels are directly attached to the oligonucleotide or polynucleotide. --

-- 298. (NEW) The system according to claim 296, wherein said label or labels are directly attached to the oligonucleotide or polynucleotide. --

-- 299. (NEW) The system according to claim 271, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide. --

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-- 300. (NEW) The system according to claim 296, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide. --

-- 301. (NEW) The system according to claim 299, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide through the formation of a complex. --

-- 302. (NEW) The system according to claim 300, wherein said label or labels are indirectly attached to the oligonucleotide or polynucleotide through the formation of a complex. --

-- 303. (NEW) The system according to claim 301, wherein said complex is selected from the group consisting of biotin and avidin, biotin and streptavidin, a sugar and lectin, and an antigen and an antibody. --

-- 304. (NEW) The system according to claim 302, wherein said complex is selected from the group consisting of biotin and avidin, biotin and streptavidin, a sugar and lectin, and an antigen and an antibody. --

-- 305. (NEW) The system according to claim 299, wherein said indirect attachment of said label or labels to the oligonucleotide or polynucleotide is through a bridging moiety. --

-- 306. (NEW) The system according to claim 300, wherein said indirect attachment of said label or labels to the oligonucleotide or polynucleotide is through a bridging moiety. --

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-- 307. (NEW) The system according to claim 271, wherein the signaling entity or entities of said label or labels are directly or indirectly attached thereto. --

-- 308. (NEW) The system according to claims 271 or 296, wherein said signaling entity or entities are directly produced. --

-- 309. (NEW) The system according to claim 308, wherein said signaling entity or entities are selected from the group consisting of a chromagen, fluorescence and chemiluminescence. --

-- 310. (NEW) The system according to claims 271 or 296, wherein said signaling entity or entities are selected from the group consisting of an enzyme, a co-enzyme, a chelating compound, a chromagen, a fluorescent compound and a chemiluminescent compound. --

-- 311. (NEW) The system according to claims 271 or 296, wherein said signaling entity or entities are selected from the group consisting of a colored compound, a chemiluminescent compound and a fluorescent compound. --

-- 312. (NEW) The system according to claim 311, wherein said colored compound comprises a dye. --

-- 313. (NEW) The system according to claims 271, 296 or 308, wherein said chemical label or labels comprise self-indicating signaling entities. --

F' -- 314. (NEW) The system according to claim 313, wherein said self-indicating signaling entities are selected from the group consisting of a fluorescent compound, a chemiluminescent compound and a chromagen compound, and a combination of any of the foregoing. --

-- 315. (NEW) The system according to claims 271 or 296, wherein said signaling entity or entities are indirectly produced or generated. --

-- 316. (NEW) The system according to claim 315, wherein said signaling entity or entities are indirectly generatable by an enzyme or enzymatic reaction. --

GP -- 317. (NEW) The system according to claim 271, wherein said signaling entity or entities are detectable or quantifiable by a <sup>means</sup> technique selected from the group consisting of photometric techniques and colorimetric techniques. --

21 -- 318. (NEW) The system according to claim 317, wherein said photometric <sup>means</sup> techniques comprise spectrophotometric techniques. --

-- 319. (NEW) An apparatus comprising:

- 1) one or more transparent non-porous or translucent non-porous devices for containing fluid or solution;
- 2) one or more surfaces or solid supports for fixing or immobilizing nucleic acids thereto, said one or more surfaces or solid supports being located in said one or more devices;
- 3) components for fixing or immobilizing nucleic acid of interest or sought to be identified; and
- 4) components for producing in or from a fluid or solution or in or through said device a quantifiable signal from a double-stranded nucleic acid, wherein one of said strands comprises a chemical label or labels which comprise a signaling entity or entities, said quantifiable signal being proportional to the amount or quantity of chemical labels attached to said nucleic acid strand. --

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-- 320. (NEW) An apparatus comprising:

- 1) one or more transparent non-porous or translucent non-porous devices for containing fluid or solution, each such device comprising a surface or a solid support for fixing or immobilizing nucleic acid thereto;
- 2) components for fixing or immobilizing to said surfaces or solid supports a nucleic acid of interest or sought to be identified; and
- 3) components for producing in or from a fluid or solution or in or through said device a quantifiable signal from a double-stranded nucleic acid, wherein one of said strands comprises a chemical label or labels which comprise a signaling entity or entities, said quantifiable signal being proportional to the amount or quantity of chemical labels attached to said nucleic acid strand. --

-- 321. (NEW) An apparatus comprising:

1) one or more transparent non-porous or translucent non-porous devices for containing fluid or solution and for fixing or immobilizing thereto a nucleic acid of interest or sought to be identified;

2) components for fixing or immobilizing to said device or devices a nucleic acid of interest or sought to be identified; and

3) components for producing in or from a fluid or solution or in or through said device a quantifiable signal from a double-stranded nucleic acid, wherein one of said strands comprises a chemical label or labels which comprise a signaling entity or entities, said quantifiable signal being proportional to the amount or quantity of chemical labels attached to said nucleic acid strand. --

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-- 322. (NEW) The apparatus of any of claims 319, 320 or 321, further comprising means for measuring said quantifiable signal, said measuring means being selected from the group consisting of photometric instrumentation, spectrophotometric instrumentation and colorimetric instrumentation. --

-- 323. (NEW) The apparatus of any of claims 319, 320 or 321, further comprising washing means to separate any unhybridized nucleic acids or other unreacted components. --

-- 324. (NEW) The apparatus of any of claims 319, 320 or 321, further comprising (a) means for measuring said quantifiable signal, said measuring means being selected from the group consisting of photometric instrumentation, spectrophotometric instrumentation and a colorimetric instrumentation; and (b) washing means to separate any unhybridized nucleic acids or other unreacted or excess components. --

-- 325. (NEW) An array of substrate surfaces, each substrate surface comprising at least one double-stranded nucleic acid fixed or immobilized thereto, wherein at least one strand comprises one or more chemical labels which comprise a signaling entity or entities which are quantifiable or detectable, and wherein at least one nucleic acid strand or a sequence therefrom in one of said substrate surfaces is different from at least one other nucleic acid strand or a sequence therefrom in another substrate surface. --

-- 326. (NEW) The array of claim 325, wherein each of said substrate surfaces has been treated with a surface treatment agent. --

-- 327. (NEW) The array of claim 326, wherein said surface treatment agent comprises an amine or amide compound. --

F' -- 328. (NEW) The array of claim 327, wherein said amine compound is selected from the group consisting of duodecadiamine (DDA), polylysine (PPL), aminopropyltriethoxysilane and a combination of any of the foregoing. --

-- 329. (NEW) The array of claim 327, wherein said amide compound comprises formamide. --

-- 330. (NEW) The array of claim 326, wherein said surface treatment agent comprises a dispersive compound. --

-- 331. (NEW) The array of claim 330, wherein said dispersive compound comprises ammonium acetate. --

-- 332. (NEW) The array of claim 327, wherein said surface treatment agent comprises an epoxy compound. --

-- 333. (NEW) The array of claim 326, wherein said surface treatment agent is selected from the group consisting of an amine compound and an epoxy compound. --

-- 334. (NEW) The array of claim 325, wherein said substrate surface is porous or non-porous. --

F -- 335. (NEW) The array of claim 334, wherein said porous substrate surface comprises a porous polymeric material. --

-- 336. (NEW) The array of claim 335, wherein said porous polymeric material is selected from the group consisting of dextran, cellulose and nitrocellulose. --

-- 337. (NEW) The array of claim 334, wherein said non-porous substrate surface is selected from the group consisting of siliceous matter and non-porous polymeric material. --

-- 338. (NEW) The array of claim 337, wherein said siliceous matter comprises glass or a glass-coated surface. --

-- 339. (NEW) The array of claim 338, wherein said glass or glass-coated surface comprises porous glass. --

-- 340. (NEW) The array of claim 338, wherein said glass or glass-coated surface is selected from the group consisting of wells, depressions, tubes and cuvettes. --

-- 341. (NEW) The array of claim 340, wherein said wells comprise microtiter wells. --

-- 342. (NEW) The array of claim 337, wherein said non-porous polymeric material comprises a plastic. --

-- 343. (NEW) The array of claim 342, wherein said plastic is selected from the group consisting of polyethylene, polypropylene, polystyrene and polyepoxide. --

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-- 344. (NEW) The array of claim 325, wherein one strand of each of said nucleic acid strands is fixed or immobilized directly or indirectly to said substrate surface. --

-- 345. (NEW) The array of claim 325, wherein said nucleic acid strands are single-stranded or double-stranded or partially double-stranded. --

-- 346. (NEW) The array of claim 325, wherein said nucleic acid strands are selected from the group consisting of DNA, RNA and a DNA-RNA hybrid. --

-- 347. (NEW) The array of claim 325, wherein said at least one nucleic acid strand comprises a nucleic acid sequence complementary to a nucleic acid sequence of interest or sought to be identified or quantified or sequenced. --



-- 348. (NEW) The array of claim 347, wherein said nucleic acid sequence of interest or sought to be identified or quantified or sequenced comprises a member selected from the group consisting of a gene or gene sequence, a pathogen or pathogenic sequence, an oncogene, and a combination of any of the foregoing. --

-- 349. (NEW) The array of claim 348, wherein any of said members comprises a mutation selected from the group consisting of a deletion, an insertion, an inversion, a point mutation, and a combination of any of the foregoing. --

-- 350. (NEW) The array of claim 347, wherein said complementary nucleic acid sequence or sequences are unlabeled. --

F' -- 351. (NEW) The array of claim 325, wherein said chemical label or labels are the signaling entity or entities. --

-- 352. (NEW) The array of claim 325, wherein said chemical label or labels comprise a signaling entity or entities which are quantifiable in or from a fluid or solution or in or through said substrate surfaces or a system containing said array or said substrate surfaces, said quantity being proportional to the amount or quantity of said label or labels. --

-- 353. (NEW) The array of claim 351, wherein said chemical label or labels comprise a signaling entity or entity which are quantifiable in or from a fluid or solution or in or through said substrate surfaces or a system containing said array or said substrate surfaces, said quantity being proportional to the amount or quantity of said label or labels. --

-- 354. (NEW) The array of claim 325, wherein the signaling entity or entities of said label or labels are directly attached thereto. --

-- 355. (NEW) The array of claim 325, wherein the signaling entity or entities of said label or labels are indirectly attached thereto. --

-- 356. (NEW) The array of claim 325, wherein said label or labels are attached directly or indirectly to one or more nucleotides in said nucleic acid strands. --

-- 357. (NEW) The array of claim 351, wherein said label or labels are attached directly or indirectly to one or more nucleotides in said nucleic acid strands. --

-- 358. (NEW) The array of claim 356, wherein said label or labels are indirectly attached to one or more nucleotides through the formation of a complex. --

-- 359. (NEW) The array of claim 357, wherein said label or labels are indirectly attached to one or more nucleotides through the formation of a complex. --

-- 360. (NEW) The array of claim 358, wherein said complex is selected from the group consisting of biotin and avidin, biotin and streptavidin, a sugar and a lectin, and an antigen and an antibody. --

-- 361. (NEW) The array of claim 359, wherein said complex is selected from the group consisting of biotin and avidin, biotin and streptavidin, a sugar and a lectin, and an antigen and an antibody. --

-- 362. (NEW) The array of claims 356, wherein said label or labels are indirectly attached to one or more nucleotides through a bridging moiety. --

-- 363. (NEW) The array of claims 357, wherein said label or labels are indirectly attached to one or more nucleotides through a bridging moiety. --

-- 364. (NEW) The array of claim 325, wherein said signaling entity or entities are selected from the group consisting of an enzyme, a co-enzyme, a chelating agent, a chromagen agent, a fluorescent agent and a chemiluminescent agent. --

-- 365. (NEW) The array of claim 351, wherein said signaling entity or entities are selected from the group consisting of an enzyme, a co-enzyme, a chelating agent, a chromagen agent, a fluorescent agent and a chemiluminescent agent. --

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-- 366. (NEW) The array of claim 325, wherein a signal is generated or generatable from said chemical label or labels by a chromagen, or by fluorescence or chemiluminescence. --

-- 367. (NEW) The array of claim 351, wherein a signal is generated or generatable from said chemical label or labels by a chromagen, or by fluorescence or chemiluminescence. --

-- 368. (NEW) The array of claim 325, wherein a signal from said chemical label or labels is quantifiable or detectable by a technique selected from the group consisting of photometric techniques and colorimetric techniques. --

-- 369. (NEW) The array of claim 351, wherein a signal from said chemical label or labels is quantifiable or detectable by a technique selected from the group consisting of photometric techniques and colorimetric techniques. --

-- 370. (NEW) The array of claim 368, wherein said photometric techniques comprise spectrophotometric techniques. --

-- 371. (NEW) The array of claim 369, wherein said photometric techniques comprise spectrophotometric techniques. --

-- 372. (NEW) The array of claim 325, wherein said chemical label or labels are selected from the group consisting of a colored compound, a chemiluminescent compound and a fluorescent compound. --

R' -- 373. (NEW) The array of claim 351, wherein said chemical label or labels are selected from the group consisting of a colored compound, a chemiluminescent compound and a fluorescent compound. --

-- 374. (NEW) A collection or set comprising the array of any of claims 325 to 373, wherein said substrate surface is porous or non-porous. --

-- 375. (NEW) A transparent non-porous or translucent non-porous system capable of retaining or containing a fluid or solution, which system comprises the array of any of claims 325 to 373. --

-- 376. (NEW) The system of claim 375, wherein said substrate surfaces are contained within the transparent non-porous or translucent non-porous system. --

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